

Summary of Cancer Incidence and Mortality for Zip Code 29009 (Bethune, SC)

Cancer Incidence in Zip Code 29009

The first step in the analysis of cancer data for zip code 29009 was to look at the number of new cancer cases diagnosed in the zip code and compare this to the number of cancer cases expected (see Table 1). This first step determines if there is anything unusual with cancer patterns in the area. The number of "expected" cancer cases is calculated by using South Carolina cancer rates and applying them to the population of the zip code.

Table 1 shows what types of cancer occurred in zip code 29009 from 1996-1999, and how many cancer cases were expected. Overall, there were fewer cases of cancer than expected, which is encouraging news. A total of 51 cases of cancer occurred in the zip code, while 52 cases were expected. The most common types of cancer were lung, female breast, colorectal and prostate cancers. These four types of cancer are also the most common cancers occurring across all of South Carolina.

Because zip code 29009 is a small zip code, the number of cases occurring in other cancer sites was very small. We must use caution when analyzing small numbers. As a general rule, a cancer site with 5 or more expected cases will be analyzed; below that the numbers are considered too small to be reliable. The remaining cancer cases that occurred in zip code 29009 occurred in sites where fewer than 5 cases of cancer were expected. Therefore, these sites were not analyzed and were excluded from Table 1.

Cancer Deaths in Zip Code 29009

To assess cancer deaths in this zip code, cancer mortality data from 1996-2000 were used. This is the most current death data available. The same process used to analyze new cancer cases was also used to analyze cancer deaths. Table 2 shows the number of cancer deaths that occurred and the number expected in the zip code. A total of 39 cancer deaths occurred in this zip code, while 32 deaths were expected. There were more cancer deaths than expected; however, this difference was not significantly higher than expected.

Lung cancer is the only cancer listed in Table 2. Other types of cancer death did occur; however, these cancer deaths occurred in sites where fewer than 5 cancer deaths were expected. Therefore, these sites were not analyzed and were excluded from Table 2.

Conclusions

To summarize, fewer cancer cases occurred in zip code 29009 than expected. There were more cancer deaths than expected in the zip code; however, this difference was not significant. The analysis did not reveal any specific cancer sites with significantly more cancer cases or cancer deaths than expected.

A cancer cluster exists when the number of cancers occurring is more than would be expected by chance. A cancer cluster is more likely to involve rarer cancers, like brain, rather than more common cancers, like lung or breast. Also, a cancer cluster would occur with one specific type of cancer rather than having excesses in several different types of cancer. Overall, there is no evidence of cancer clustering or of cancers resulting from environmental exposures in zip code 29009.

For questions about this report, please contact Laura Sanders at the SC Central Cancer Registry.

Report provided by:

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Information on cancer incidence provided by the SC Central Cancer Registry, Office of Public Health Statistics and Information Services, SC Dept. of Health and Environmental Control.

Information on cancer mortality provided by the Division of Biostatistics, Office of Public Health Statistics and Information Services, SC Dept. of Health and Environmental Control.

8/20/02 lcs

Table 1. Analysis of New Cancer Cases in Zip Code 29009, 1996-1999

<u>Cancer Site</u>	<u>Observed No. of Cases</u>	<u>Expected No. of Cases</u>	<u>Observed/Expected</u>	<u>Chi-SquareTest*</u>
Lung/Bronchus	9	8.4	1.07	0.05
Breast (Female)	7	7.5	0.93	0.04
Colon/Rectum	6	6.2	0.97	0.00
Prostate	5	8.8	0.57	1.67
All Sites	51	52.0	0.98	0.02

Excludes in situ cases of cancer to allow for comparison.

Excludes cancer sites with less than 5 cases of cancer expected due to the unreliability of statistical tests based on small numbers.

*The Chi-Square statistical test allows us to determine if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of cases is significantly different from the expected number of cases.

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July 30, 2002 lcs

Table 2. Analysis of Cancer Deaths in Zip Code 29009, 1996-2000

<u>Cancer Site</u>	<u>Observed No. of Deaths</u>	<u>Expected No. of Deaths</u>	<u>Observed/Expected</u>	<u>Chi-SquareTest*</u>
Lung/Bronchus	12	9.2	1.30	0.85
All Sites	39	31.6	1.24	1.76

Excludes cancer sites with less than 5 cancer deaths expected due to the unreliability of statistical tests based on small numbers.

*The Chi-Square statistical test allows us to determine if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of deaths is significantly different from the expected number of deaths.

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